

COMPANY OPERATIONS FACILITIES (BUILDING'S 9427, 9437, 9447, 9457, 9467 & 9487)

**WARFIGHTER ROAD
FORT CARSON, COLORADO**



BUILDING OCCUPANT GUIDE

JUNE 2011

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INTRODUCTION

This Guide is intended to provide general information for users of the Company Operations Facilities buildings and provide basic information about the systems and their use. It is not intended as a maintenance manual nor as a detailed functionality or operations guide.

Any requests for operations or maintenance manuals and information should be referred to the Fort Carson Directorate of Public Works (DPW).

BUILDING FAST FACTS

Request For Proposal Issued By:	U.S. Army Corps of Engineers
Date of RFP:	February 2009
RFP Number:	W912HN-07-R-0099 DK01
Design-Builder:	Mortenson Construction
Architect:	Leo A Daly
Date of Award:	May 19, 2009
Notice To Proceed:	June 3, 2009
Start of Design:	June 2009
Start of Construction:	August 2009
Building Completion:	December 2010
Final Project Value:	\$70,514,756
Building Gross Square Footage:	360,000 square feet
LEED Certification:	(expected as at 5/2011) Gold

HEATING, VENTILATION & AIR CONDITIONING SYSTEMS (HVAC)

This building is equipped with mechanical systems to provide cooling, heating and ventilation for occupants. The cooling is provided by a air handling units with integral refrigerant systems. The heating is provided by two hot water boilers. The primary building temperature comfort system is controlled by a Building Automation System (BAS).



The BAS is controlled and monitored by DPW centrally on post. Time of day scheduling is controlled via the main controller and sensors determine whether the system heats or cools. Building occupants are not able to make any thermostat adjustments. Individual zone sensors are located throughout the building and each sensor will govern the temperature level of all the areas or offices in that zone. Based on Fort Carson policy, the temperature for heating will be set to 68°F and for cooling, the temperature will be set to 78°F. Actual air temperature can vary up to 2°F from these settings. DPW personnel are trained on the functionality of the BAS system and can make adjustments from the central control location. Any special requests must be directed to DPW.

Each entry lobby has an individual Cabinet Unit Heater the communication and electrical rooms have fan coil units installed in them for heating and cooling. These units all have integral thermostats which are adjustable by building occupants.

Separate ventilation is provided in the restrooms, electrical rooms, communication rooms and the boiler room. Building ventilation is controlled by the BAS and no separate fan control is necessary. In each Readiness Bay there is a High Volume Low Speed (HVLS) Fan in each readiness bay. These are used for air circulation in the high bay areas and are controlled by VFD drives that are pre programmed at the factory and can only be adjusted by the central BAS. These fans are activated by an

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occupancy sensor that detects motion in the Readiness Bays. They can also be activated by pushing the button at the occupancy switch that is located next to the door to the corridor in each bay.

All HVAC systems have been professionally balanced and should not be changed by the building user. Any changes made to airflow by covering vents or changing damper positions will affect the overall balance of the system and ultimately negatively affect other occupants in the area. Any comfort requests or complaints should be directed to DPW.

Life safety systems are integral to the design of the HVAC system so that in the event of fire, smoke detectors will activate the alarm system and shut off the ventilation equipment to prevent the spread of the smoke. Dampers will automatically close to allow occupants to safely exit the building without fear of smoke spread.

No maintenance of mechanical equipment is required by the building occupants. DPW personnel have been trained on the care and maintenance of the building systems.

Do's & Don'ts

- **DON'T** try and make any other adjustments to heating/cooling or ventilation systems. If temperatures deviate significantly from the 68°F heating or 78°F cooling standard settings, please notify DPW.

LIGHTING CONTROLS

The lighting control system in the COF is an Intelligent Lighting Control system (ILC). This is a lighting control system geared specifically for energy management and is designed to make the best use of natural light to reduce the building energy consumption. At night, all normal lighting (except emergency lights) will switch off automatically. During the day, most areas are controlled by occupancy sensors located either on the ceiling or on the wall. Lighting is activated by the sensor sensing movement such as a person walking into a room. Another energy saving feature of ILC is specialized “daylight harvesting”. This automatically turns off or reduces output of lights near windows when there is sufficient natural light in that area.



In conference rooms, the wall switches allow you to set variable levels of lights along with on and off. For example, you can have all the lights all full on or you can choose to reduce the lighting from 100% down to 20%.

How areas work:

- PUBLIC or COMMON SPACES (like open areas): During normally occupied times, lighting manually triggered ON in spaces such as corridors and open areas, and readiness areas, additional daylight harvesting will control the number of fixtures that are on from full to none. Control panel has working hour's operation to assure that lighting is off during non working or occupied times.
- PRIVATE ROOMS (like offices) & UTILITY SPACES: Utilize wall sensors that will allow for manual and automatic control of lighting.
- RESTROOMS: Restrooms are Auto ON and Auto OFF 24/7 for hands free operation of lighting.

- CONFERENCE ROOMS: Lighting manually triggered ON using occupancy sensors for automatic off, or manual off can also be utilized. At night, lights will be turned OFF if the space is unoccupied.
- Readiness Areas are manual lighting on only, with light harvesting and timed off, using occupancy sensors.
- Hardstand areas are manual on and timed off.

Do's & Don'ts

- **DO** walk into a room. Just standing in the doorway will probably not activate the lighting.
- **DO** check to see if there is a manual switch if no lights come on when you enter a room. Lighting (on) for many rooms is by a normal switch, and occupancy sensors will only switch the lighting off once no-one is in the room.
- **DON'T** expect all of the lights to be on at night or if you are early into the building in the morning.
- **DO** expect some of the lights to turn off during the day if it is sunny.
- **DO** contact DPW for working hours or other programming changes.

COMMUNICATIONS SYSTEMS

There are many different types of Communications systems used at the BBHQ including, SIPRNet, CATV and voice. The SIPRNet (Secret Internet Protocol Router Network) drops are located only in Communication rooms of the building. These are all passive systems, meaning they do not require anything of the user other than to “plug-in”. In the training rooms there are both voice and data jacks in the walls outlets, while the floor boxes contain only data jacks. The floor boxes and wall outlets in rest of the building have both voice and data jacks.



Data Outlet

Do's & Don'ts

- **DON'T** try and open the outlet if a jack is not working.
- **DON'T** wiggle or jam plugs into jacks if they are not working
- **DO** call DPW if you are having issues with any jacks.

PLUMBING SYSTEMS

This building is equipped with the usual complement of plumbing systems including storm drainage from roof surfaces, sanitary waste and vent, domestic (potable) hot and cold water distribution and natural gas systems. In addition there is a solar array on the roof of the readiness bays, which provides supplemental heating to the domestic hot water system.

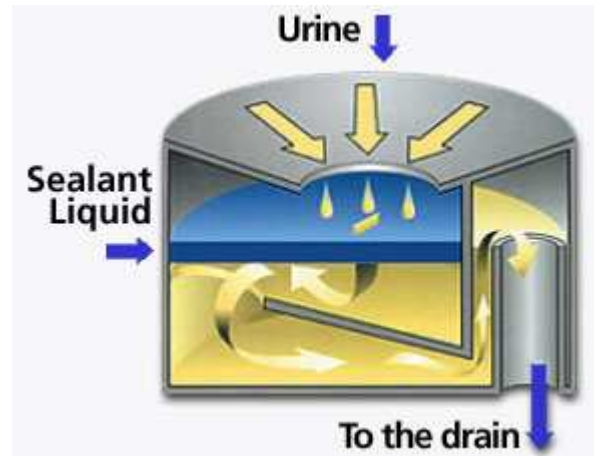
Plumbing fixtures function as expected in a modern office building. There are shut off valves located strategically throughout the building and at each plumbing fixture for service and emergency use. In normal operation the building user should have no need to do anything with the plumbing systems. If for any reason there is a problem with a water leak at a fixture, the best course of action is to close the angle stop, located just below the fixture to shut off the flow of water until repairs can be made by DPW. The water entry to the entire building is located in the mechanical room located on the east side of the administration area of the COF buildings.

WATERLESS URINALS

Waterless urinals are provided in this facility. Waterless urinals all use basically the same science. Urine flows down the bowl of the urinal past a debris-catching strainer. The urine then passes through a sealing liquid, and collects in the waste pipe below. The urine sinks through the sealing liquid which floats on top of the layer of urine below. Odor is trapped below the oil layer, until the cartridge runs out of sealing liquid when the odor will be released into the bathroom.



Waterless Urinal Cartridge



Waterless urinals obviously conserve tremendous amounts of fresh water but also the electricity required to pump the water. And they generate much smaller volumes of sewer water that require treatment.

Do's & Don'ts

- **DO** make sure the urinal cartridges are replaced at the recommended intervals. If the urinals smell, the cartridges probably need replacing.
- **DON'T** pour large amounts of water, such as buckets of mop water, down the urinals – this will quickly deplete the sealant liquid.
- **DON'T** use waterless urinals as spittoons. Chew will quickly clog up the cartridge.

Thank you for helping save as much as 5% of our country's water use!

SOLAR HOT WATER SYSTEM



This building is equipped with a solar hot water system. “Solar collectors”, seen on the readiness bay roof in the picture opposite, use the sun’s energy to provide heat to a hot water storage tank where natural gas heating heats it up to the required hot water temperature. This pre-heating process saves a lot of natural gas and wasted energy use.

Do's & Don'ts

- **DON'T** worry that there will be no hot water on cloudy days or at night – the gas heating system will provide hot water even when there is no sunshine!
- **DO** keep your shower time short – even though the system uses the sun’s energy, it also uses natural gas heating and only stores so much water.
- **DON'T** attempt any maintenance on the system. If there is a hot water shortage or fault in the system, call in DPW Maintenance.

FIRE ALARM & SUPPRESSION SYSTEM



This building is provided with a fire alarm and suppression (sprinkler) system designed and installed in accordance with the National Fire Protection Association (NFPA) regulations. Automatic, ceiling-mounted fire sprinklers (as seen in the top-left photo) are provided throughout the building. These sprinkler heads operate at a pre-determined temperature and do not all activate (like in the movies) in the event of a fire. They are not smoke activated either.



As soon as any sprinklers activate, an alarm is automatically set off at the Fort Carson Fire Department by the building fire alarm system. The fire alarm can also be activated manually by using one of the alarm pull boxes as shown in the photo to the left.

Portable fire extinguishers are also located throughout the building for extinguishing or controlling small fires. They are not intended for fighting out-of-control fires i.e. reaching the ceiling or endangering occupants. These extinguishers are the dry chemical type and can be used on combustibles, flammable materials or electrical fires.



Do's & Don'ts

- **DON'T** cover sprinkler heads or hang things from them. This could prevent them from working properly and could cost lives.
- **DO** make sure you have read and understand the fire emergency procedures and know the different exit routes out of the building.
- **DO** check the service tags on fire extinguishers near your workspace are up-to-date, so the extinguisher works properly when you need it to.

POST INDICATOR VALVE



A Post Indicator Valve (PIV) is a fire water valve located on the 8" diameter water line that feeds the building's fire extinguishing system. A PIV is used by the Fire Department to control the water supply to the building in the event of a fire when it is too unsafe to switch off the water in the Fire Riser Room.

The PIV's for the COF's are located between the POV parking and the mechanical room. Unauthorized operation of the PIV is prevented by an electronic tamper switch mounted on the valve. Attempted operation of the valve will set off an alarm at the Fire Department.

Do's & Don'ts

- **DON'T** try and operate the PIV. It does not control the domestic water supply to the building – only the fire water supply. Tampering with the valve will set off an alarm at the Fire Department.

KNOX BOX

A Knox Box is a small wall-mounted safe that holds the building key for firefighters and EMT's to retrieve in emergencies. The Fire Department holds the master key to all Knox Boxes on post, so they can quickly enter a building without having to find individual building keys or to force entry by breaking doors or windows.



Do's & Don'ts

- **DO** leave the Knox Box for Fire Department and EMT personnel's use only!

MASS NOTIFICATION SYSTEM

The Mass Notification System (MNS) provides real-time information and instructions to people in the building and is intended to protect life by indicating the existence of an emergency situation and instructing people of the necessary and appropriate response and action. It consists of an Autonomous Control Unit (ACU), ten Local Operating Consoles (LOC) and a speaker network throughout the building. The ACU is integrated with the Fire Alarm Control Panel in the Electrical Room and is used to monitor and control the building MNS by the Fire Department. The FD can also operate the MNS remotely, allowing post-wide voice messages to be transmitted throughout this building. The LOC's allow both emergency response forces and building occupants to operate the building's MNS including providing live voice messages and instructions to occupants.



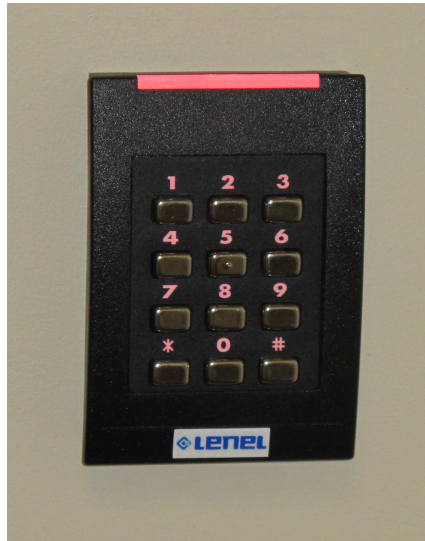
Local Operating Console (LOC)

Do's & Don'ts

- **DON'T** use the MNS as a building paging system – use it **ONLY** in an emergency situation. Use of an LOC in any way will alert the Fire Department to a potential emergency.
- **DO** follow any verbal instructions provided via the MNS. If the alarm lights and sirens go off and no verbal instructions are heard, exit the building immediately and proceed to your designated assembly area.

KEYLESS ACCESS

A Lenel Keyless Access System is used in this building. Card readers and keypads are located throughout the building in order to access secured areas. You must either have a programmed key or access code to access these areas. The Lenel system is a passive system, meaning that it does not require anything of the user other than the code input or key swipe. If anything appears to be malfunctioning please contact DPW.



Keypad / Card Reader

Do's & Don'ts

- **DO** make sure your card is kept in good condition.
- **DO** hold your card in front of the reader to gain access - the orientation of the card is not important.
- **DON'T** try and perform any maintenance on a keypad or card reader.

X-09 LOCKS

The X-09 high security lock is a third generation electromechanical lock and meets the US Government's highest security standard for container locks and doors. It is approved for use on Class 5 and Class 6 Filing Cabinets and Class 5 Security Vault Doors. Because a twist of the dial provides all the power necessary to enter the combination, the X-09 provides all the benefits of high-security electronic locking while maintaining the reliability of a mechanical lock, independent of batteries or outside power sources.



Do's & Don'ts

- **DO** refer any questions or issues with X-09 locks to Fort Carson Physical Security.

SECTIONAL OVERHEAD DOORS

Clopay sectional overhead doors are provided at the rear side of the Readiness Modules in the COF buildings. Before opening the door, ensure the door is unlocked by moving the lock release lever. Then pull the hand chain smoothly and vertically in line with the chain wheel. Always raise the door to the fully open position and engage the hand chain in the chain locking cleat. To close, pull smoothly on the cord or hoist hand chain, then stand on the door handle and engage the shoot bolt in side track.



Do's & Don't's:

- **DON'T** throw the door upwards or slam it downwards.
- **DO** keep door opening clear while opening and closing the door.
- **DON'T** operate an obviously damaged door. If a door is found to be damaged, lock the door and leave a warning note on it. Ensure that the damaged door is checked by a qualified person before operating.
- **DO** leave the door only in fully open or fully shut positions.
- **DON'T** under any circumstances attempt to adjust the barrel or spring assembly – this can be extremely dangerous. To ensure safe and reliable operation, regular maintenance and inspection are essential by fully trained and competent technicians.

PROJECTOR SCREENS



Operating Instructions:

- Pull down on pull cord until desired picture area is obtained. Lock into position by releasing cord slowly. Be sure screen is locked before releasing cord completely.
- To retract the screen, pull the cord down about 6 inches and release more quickly without letting go of the cord. Allow the screen to retract completely into the ceiling housing.

Do's & Don'ts

- **DO** operate smoothly and slowly to avoid damaging the screen operation.
- **DO** keep screen retracted in the ceiling housing at all times when not in use.
- **DO** call DPW for assistance if screen fails to operate properly.

LANDSCAPE IRRIGATION

Due to the relatively dry climate at Fort Carson, certain landscaping receives supplemental irrigation. Landscape irrigation for this building can be summarized as follows:

- The trees between the COF and the POV parking are irrigated by a permanent system.
- Grass areas are seeded with native grasses and will be temporarily irrigated using an above-ground piping system for the first year.



The permanent irrigation system is in use during the growing season, which runs from the beginning of April through end October. The system is operated by a time clock which will open the water valves as programmed by DPW – generally two or three times per week. There is no action required by the building occupants to operate or maintain this system.

Do's & Don'ts

- **DO** report any unusual conditions to DPW - areas that are excessively wet or dry, leaking sprinkler heads, etc.